

AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
October 20-21, 2003
HISTORY RECORD

FAA Control # 03-02-248

Subject: Substitution of GPS For Missed Approach Operations

Background/Discussion: An NBAA operator reported that he was unable to fly the ILS Runway 2 approach at Keene, NH because the VOR was OTS. The Missed Approach Segment for the ILS at EEN is predicated on the VOR. No alternated missed approach was available during the recent outage of the EEN VOR. A copy of the approach is attached.

Transitions, feeder routes and missed approaches for navaid-based procedures (including ILS approaches) are included in GPS and FMS navigation databases.

The AIM currently permits substitution of GPS for NDB and DME, but does not allow other substitutions.

AIM paragraph 1-1-20-f-5 states: "Subject to the restrictions below, operators in the U.S. NAS are authorized to use GPS equipment certified for IFR operations in place of ADF and/or DME equipment for en route and terminal operations."

Recommendations: NBAA requests that the FAA develop explicit approval for the substitution of GPS guidance during Missed Approach operations when flying navaid-based instrument approach procedures.

Comments: This recommendation affects the AIM and Order 7110.65

Submitted by: Steve Bergner

Organization: NBAA

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Date: October 3, 2003

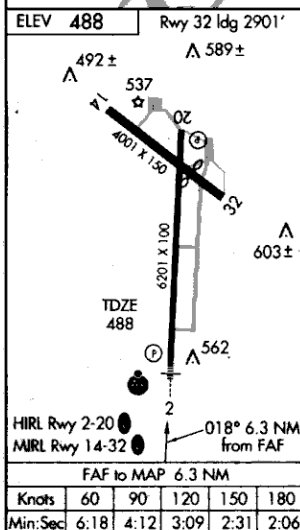
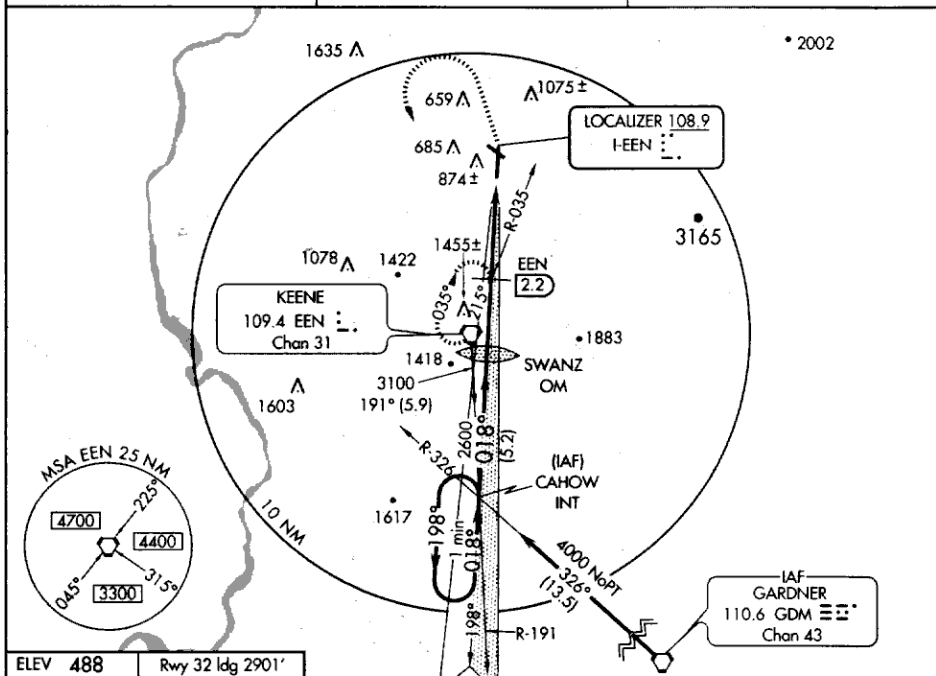
| | | | |
|----------------------------|------------------------|-----------------------------|---|
| LOC I-EEEN 108.9 | APP CRS 018° | Rwy Idg TDZE Apt Elev | 6201 488 488 |
|----------------------------|------------------------|-----------------------------|---|

ILS RWY 2

KEENE/DILLANT-HOPKINS (EEN)

| | |
|--|---|
| <p>▼ Inoperative table does not apply to S-LOC 2</p> <p>▲ NA CATs A and B.</p> | <p>MALSR</p> <p>MISSED APPROACH: Climb to 1600 via heading 006° then climbing left turn to 3000 direct EEN VORTAC and hold.</p> |
|--|---|

| | | |
|--------------------------|--------------------------------------|-------------------------------|
| AWOS-3 119.025 | BOSTON CENTER 123.75 338.2 | UNICOM 123.0 (CTAF) |
|--------------------------|--------------------------------------|-------------------------------|



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|----------------------------|---------------------------------|---------------------------------|-------------------------|-------------------|-------------------------------|---------|
| One Minute Holding Pattern | | CAHOW INT | SWANZ OM | 1600 | 3000 | EEN |
| | | 2700 | 2588 | HDG 006° | | 109.4 |
| | | GS 3.00° TCH 56 | 2600 | EEN 2.2 | | EEN 5.7 |
| | | 198° | 018° | | | |
| | | 018° | 018° | | | |
| | | 5.2 NM | 2.8 NM | 3.5 NM | | |
| | | LOC only | 1740 | | | |
| CATEGORY | A | B | C | D | | |
| S-ILS 2 | 823-1 335 (400-1) | | | | | |
| S-LOC 2 | 1740-1 1/4 1252 (1300-1 1/4) | 1740-1 1/2 1252 (1300-1 1/2) | 1740-2 1/2 | 1252 (1300-2 1/2) | | |
| CIRCLING | 1740-1 1/4 1252 (1300-1 1/4) | 1740-1 1/2 1252 (1300-1 1/2) | 1740-3 | 1252 (1300-3) | | |
| DME MINIMUMS | | | | | | |
| S-LOC 2 | 1040-1 | 552 (600-1) | | | 1040-1 1/4 552 (600-1 1/4) | |
| CIRCLING | 1380-1 1/4 892 (900-1 1/4) | 1500-1 1/2 1012 (1100-1 1/2) | 1500-3 1012 (1100-3) | | 1600-3 1112 (1200-3) | |

KEENE, NEW HAMPSHIRE
Amdt 2A 02052

42°54'N-72°16'W
165

KEENE/DILLANT-HOPKINS (EEN)
ILS RWY 2

NE-1, 04 SEP 2003

NE-1, 04 SEP 2003

Initial Discussion - Meeting 03-02: New issue submitted by Steve Bergner, NBAA. The issue was prompted when a NBAA member, in a GPS equipped aircraft, was refused an ILS approach because the missed approach instructions required the aircraft to proceed to a VOR and hold. The VOR was out of service and there were no alternate missed approach instructions available. The missed approach in question required a climb to an altitude via a dead reckoning heading followed by a turn direct to the VOR, all maneuvers within GPS navigation capability. NBAA is asking the FAA to consider allowing GPS to be substituted for VORs as is allowed for NDBs and DMEs. Bill Hammett, AFS-420 (ISI) agreed to forward the issue to AFS-410 for consideration. **ACTION: AFS-410.**

MEETING 04-01: Vinny Chirasello, AFS-410, reported that his office is working the issue. Several meetings have been held and it has been determined that legal issues are involved. There are also TSO questions regarding supplemental vs. sole means navigation. A legal opinion will have to be obtained from FAA Chief Counsel. Randy Kenagy, AOPA, asked if WAAS is acceptable for substitution and Vinny responded yes. **ACTION: AFS-410.**

MEETING 04-02: Vinny Crirasello, AFS-410, briefed that his office is still gathering data on this issue and there is no change in status. **ACTION: AFS-410.**

MEETING 05-01: Vinny Crirasello, AFS-410, briefed that his office has started discussion on this issue. There has been one meeting between AFS-200/400 and AIR-130 thus far; however, the initiative has taken a back seat to RNP criteria development and charting specifications. The issue will receive more attention prior to the next ACF. Vinny stated that they are pursuing all facets of RNP/RNAV substitution. Mike Riley, NGA, asked if this would re-define GPS use, expressing concern that FAA changes may affect military operations. Discussion ensued on RNAV, GPS and FMS use to fly conventional procedures. Larry Wiseman, AFFSA, requested that his office be kept in the discussion loop. AFS-410 will continue to research the issue and report. **ACTION: AFS-410.**

MEETING 05-02: Vinny Chirasello, AFS-410, briefed that AFS-410 has been studying the issue as presented and determined that the issue should be expanded to address all facets of RNAV substitution within the NAS. As a starting point, AFS-410 has scheduled an ad hoc 3-day meeting from November 8-10 and address all phases of flight; i.e., departure, en route, and arrival. The meeting will be government only and include FAA representation from AFS, AIR, Air Traffic, and the NFPO, as well as the military. The original ACF issue presented by NBAA regarding missed approach substitution is a small part of the total solution; however, Vinny asserted that it will be at the top of the list. Ted Thompson, Jeppesen, asked the FAA to consider the applicability of clear, concise NAVAID/equipment notes as a part of the substitution review. Ted also suggested the FAA consider work already accomplished on the subject in Europe. Mark Brown, NAVFIG, asked that the study consider obstacle containment areas. Bill Hammett, AFS--420 (ISI) stated that the original issue would remain open until resolved. Additionally, a new, more encompassing issue addressing total RNAV/NAVAID substitution would be opened - See New Business Issue 05-02-261. **ACTION: AFS-410.**

MEETING 06-01: Vincent Chirasello, AFS-410, briefed that the FAA working group has met and begun developing a matrix for RNAV substitution. The PARC also has a working group addressing the issue. It is planned that the groups will merge and reach a harmonized position; however, an estimated completion date is dependent on the PARC. Kevin Comstock, ALPA, asked whether the matrix is private or available to industry. Vinnie responded that it is not mature enough to release to the public at this time. Bill Hammett asked if there was any interim response to the original NBAA recommendation to allow GPS substitution for VORs as is done for NDBs. Vinnie stated that the FAA and PARC are addressing overall RNAV substitution and this question will be considered in the process. He further recommended that, since this issue is a small part of the total solution, it be closed in favor of tracking through issue 05-02-261. The group concurred.

Item Closed - (See issue 05-02-261 for further action).
